

**OCCUPATIONAL SAFETY
AND HEALTH STANDARDS BOARD**

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**FINAL STATEMENT OF REASONS****CALIFORNIA CODE OF REGULATIONS**

**TITLE 8: Chapter 4, Subchapter 7, Article 15, Section 3482 and
Article 109, Sections 5161 and 5178
of the General Industry Safety Orders (GISO)**

Grain Handling Facilities**MODIFICATIONS AND RESPONSE TO COMMENTS RESULTING FROM
THE 45-DAY PUBLIC COMMENT PERIOD**

There are no modifications to the information contained in the Initial Statement of Reasons except for the following substantive, nonsubstantive and sufficiently related modifications that are the result of public comments and/or Board staff evaluation.

Section 5161. Definitions, Flat storage structure.

The original definition is proposed to be modified in response to concerns raised by Federal OSHA, Region IX. Their concerns were that the second sentence: "Flat storage structures include flat bottom buildings where grain is stored on the floor or other structures where grain is stored in a pile in bulk on a flat bottom surface" is not found in the federal standard and does not appear to require some non-ground level grain structures to meet the requirements and protections intended by the federal standard. A key to the federal definition is "ground level opening" and it is tied to being able to enter from a ground level to either manually or mechanically, remove the grain. Thus the second sentence of the definition is proposed to be deleted to clarify what is a flat storage structure, consistent with the federal standard.

Furthermore, the purpose of the "unrestricted ground level opening" is proposed to be clarified for consistency with the federal definition found in 1910.272(c).

The Board also proposes a modification of the first sentence to further clarify the definition of flat storage structure by deleting "that is not a confined space..." This phrase, not found in the Federal standard, could be misinterpreted to mean that there are no confined spaces in flat storage structures. Some flat storage structures may contain confined spaces, or may themselves be confined spaces at certain times of the year due to stored product which may affect access and egress. Furthermore, dangerous air contamination resulting from chemical treatments or other conditions may exist from time-to-time.

The necessity of these modifications is to clarify what is a flat storage structure and to make them at least as effective as the federal counterpart standards.

Subsection 5178(a)(1).

This section, as originally proposed, used the term “flat outdoor storage.” A non-substantive modification is proposed to change the term to “outdoor flat storage.” The purpose and necessity is to use consistent terminology throughout the proposal.

Subsection 5178(a)(2)(A).

Subsection (a)(2), as originally proposed, defined the term “grain” for the purposes of Section 5178 to include raw and processed grain, grain products, and cottonseed. A new subsection (a)(2)(A) is proposed that will clarify that the term ‘grain’ is limited to the kernel and does not include the stalk or other vegetative matter of the grain plant. The purpose and necessity of this amendment is to clarify that Section 5178 does not apply to silage. Silage will continue to be regulated by Section 3482, Bulk Storage of Loose Material.

Subsection 5178(b).

This subsection was originally titled “Entry into grain storage structures.” The Board proposes to modify the title to read: “Entry into grain storage structures, flat storage structures and work on outdoor flat storage.” As proposed, protections from engulfment hazards could be interpreted to only be required for entry into bins, silos, tanks or other grain storage structures. Similar engulfment hazards can exist in flat storage structures and work on outdoor flat storage. The purpose and necessity of this modification is to clarify that subsection (b) contains certain requirements applicable to grain storage regardless of whether it is in a bin, silo, tank, flat storage structure, flat outdoor storage or otherwise. The state standard essentially combines the requirements of 1910.272(g) and (h) since many are duplicative. Those requirements of subsection 5178(b) which are not applicable to outdoor flat storage and certain flat storage structures are noted by exception.

Subsection 5178(b)(1).

This subsection contains provisions for entry into bins, silos, tanks or other confined spaces. Since modifications are proposed to include entry into flat storage structures and work on outdoor flat storage within subsection (b), an exception for these provisions is proposed for outdoor flat storage and flat storage structures in which there are no toxicity, flammability, oxygen-deficiency, or other atmospheric hazards. As noted above, the state standard essentially combines the requirements of 1910.272(g) and (h) since many are duplicative. The purpose and necessity of the exception is to clarify that subsection (b)(1) does not apply to outdoor flat storage and flat storage structures in which there are no toxicity, flammability, oxygen-deficiency, or other atmospheric hazards.

Subsection 5178(b)(1)(A).

Subsection 5178(b)(1)(A) as originally proposed, prescribed that a written authorization certifying that the precautions contained in section 5158, Other Confined Space Operations, were implemented prior to employees entering confined spaces. The Board proposes to add verbiage that will require the certification to include the precautions contained in Section 5178 as well as those in Section 5158. The purpose and necessity for this amendment is to respond to concerns about precautions and safeguards to prevent exposures to atmospheric hazards and hazardous

energy which presents a danger to employees inside grain storage structures.

Subsection 5178(b)(1)(B).

This subsection, originally proposed as subsection (b)(2) has been redesignated as (b)(1)(B) in order to group all requirements for entry into confined spaces in one location. Section 5178(b)(1)(B) prescribes precautions for testing for oxygen content, combustible gases or vapors, combustible particulate, or toxic agents. A note to (b)(1)(B) clarifies that this subsection does not preclude the requirement to control harmful exposures under the provisions of GISO Article 107 (Dusts, Fumes, Mists, Vapors and Gases) to toxic substances at concentrations less than those immediately dangerous to life or health. The purpose and necessity is to group all requirements for entry into confined spaces into one location, to address concerns about exposure to toxic substances and to assure proper application of confined space requirements.

Subsection 5178(b)(2).

This subsection, as originally proposed [formerly (b)(3), but renumbered due to reformatting of (b)(1)], required that all mechanical, electrical, hydraulic, and pneumatic equipment which presents a danger to employees be locked-out, tagged-out, blocked-out, or otherwise prevented from operating prior to employee entry into grain storage structures. An amendment is proposed to extend this precaution to include work in flat storage structures and working on outdoor flat storage as applicable. Since these hazards are not just limited to grain storage structures, the purpose and necessity for this amendment is to protect employees from hazardous energy regardless of whether it is in a grain storage structure, flat storage structure, or in outdoor flat storage.

Subsection 5178(b)(3).

This subsection, as originally proposed [formerly (b)(4), but renumbered due to reformatting of (b)(1)], prohibits the practice of “walking down grain” to make it flow within or out from a grain storage structure. An amendment is proposed to extend this precaution to prohibit “walking down grain” in flat storage structures and on outdoor flat storage due to similar hazards. Since these hazards are not just limited to grain storage structures, the purpose and necessity for this amendment is to protect employees from engulfment hazards regardless of whether they are in a grain storage structure, flat storage structure, or in outdoor flat storage.

Subsection 5178(b)(5).

This subsection, as originally proposed [formerly (b)(6), but renumbered due to reformatting of (b)(1)], required the employer to equip the employee with a Class III body harness with lifeline, when the employee is exposed to engulfment hazards due to work on stored grain. A modification is proposed to change “Class III body harness” to “full body harness” since the term “Class III” lacks sufficient clarity. The purpose and necessity for this modification is to provide clarification of the type of body harness.

Subsection 5178(c)(2).

This subsection, as originally proposed required a hot work permit to certify that the requirements of Section 4848 (fire prevention and suppression procedure) have been implemented prior to beginning hot work operations. This is being modified to a more comprehensive certification that the requirements contained in GISO Groups 10 and 11 have been implemented. These Groups comprehensively cover welding and cutting operations using gas and electric equipment. The purpose and necessity for this modification is to assure that all the known hazards of hot work are addressed by the permit.

Subsection 5178(f)(2).

This subsection, as originally proposed, prescribed permissible locations for filter collectors which are part of a dust collection system in a grain handling facility. The original proposal would have required this provision to become effective on the effective date of these proposed modifications. The effective date for this requirement is changed to July 5, 1990, with an exception for existing non-compliant filter collectors installed after July 5, 1990, to allow those installations a 12 month grace period to be brought into compliance.

This counterpart Federal standard became effective March 30, 1988. California was obligated as part of its agreement with Federal OSHA when it resumed administration of its State Plan to immediately adopt the Federal standards that had been promulgated during the disengagement. Federal OSHA has determined the effective date to be July 5, 1990. The purpose and necessity for these modifications is to comply with the State Plan agreement.

Subsection 5178(g)(3).

This subsection, as originally proposed prescribed that procedures for the use of tags and locks shall be implemented in accordance with the provisions of GISO 3314 to prevent the inadvertent application of energy or motion to equipment being repaired, serviced, or adjusted, which could result in employee injury. It is proposed to clarify this provision by adding that such locks and tags shall be removed in accordance with established procedures only by the employee installing them or, if unavailable, by his or her supervisor. Although implicit in GISO 3314, the purpose and necessity for this amendment is to conform with counterpart 1910.272(m)(4) and to clarify lockout/tagout procedures for grain handling.

Subsection 5178(l)(1).

This subsection, as originally proposed required the employer to inform contractors performing work at the grain handling facility of known potential fire, and explosion hazards related to the contractor's work and work area. It is proposed to add engulfment hazards to the list of hazards about which the employer must inform contractors. The purpose and necessity for this modification is to enhance safety for employees of contractors.

Subsection 5178(m)(3).

This subsection, as originally proposed required at least two means of emergency escape for tunnels in grain elevators constructed on or after the effective date of this standard. The effective date for this requirement is changed to July 5, 1990, with an exception for existing non-compliant tunnels constructed after July 5, 1990, to permit those installations a 12 month grace period to be brought into compliance.

This counterpart Federal standard became effective March 30, 1988. California was obligated as part of its agreement with Federal OSHA when it resumed administration of its State Plan to immediately adopt the Federal standards that had been promulgated during the disengagement. Federal OSHA has determined the effective date to be July 5, 1990. The purpose and necessity for these modifications is to comply with the State Plan agreement.

SUMMARY AND RESPONSE TO ORAL AND WRITTEN COMMENTS

I. Written Comments.

Christopher Lee, Acting Regional Administrator, U.S. Department of Labor, OSHA Region IX, by letter dated April 11, 2006.

Comment No. 1:

GISO 5161, definition of “Flat Storage Structure.” The second sentence: “Flat storage structures include flat bottom buildings where grain is stored on the floor or other structures where grain is stored in a pile in bulk on a flat bottom surface” is not found in the federal standard and does not appear to require some non-ground level grain structures to meet the requirements and protections intended by the federal standard. A key to the federal definition is “ground level opening” and it is tied to being able to enter from a ground level to either manually or mechanically, remove the grain.

Response:

The Board accepts this comment and proposes to modify Section 5161, the definition of “flat storage structure,” to clarify that all flat storage structures, by definition, must have unrestricted ground level entry.

Comment No. 2:

Section 5178(b), Entry into grain storage structures. The proposed standard does not have separate sections for (1) entry into grain storage structures and (2) entry into flat storage structures, comparable to 29 CFR 1910.272(g) and (h) respectively. They opine that the separation of requirements for the two types of storage is necessary due to differences between them.

Response:

The Board agrees that there are some differences between the two types of storage; however, there are also many requirements common to both. Furthermore, the federal standard does not address outdoor flat storage at all, and this is a common storage method in California. Therefore, the Board proposes to clarify Section 5178(b) to indicate that requirements for all three types of storage are included within the subsection and to denote, by exception, requirements that may not apply to outdoor flat storage and flat storage structures.

Comment No. 3:

This comment refers to Section 5178(b)(1), written authorization. The written authorization does not include certifying that the required precautions for exposure to toxic agents above the ceiling level or mechanical, electrical, hydraulic and pneumatic equipment presenting a hazard to employees inside the structures have been evaluated and implemented prior to entry. Verbal clarification from Region IX indicates that their concern is that the written documentation needs to certify that the precautions contained in 1910.272(g) have been implemented prior to employees entering bins, silos or tanks. [1910.272(g)(1)(i), (ii) and (iii)].

Response:

Section 5178(b)(1)(A) requires that the written authorization shall certify that the precautions contained in Section 5158 have been implemented prior to employees entering confined spaces. In response to Region IX concerns about precautions for exposure to mechanical, electrical, hydraulic, and pneumatic equipment which presents a danger to employees inside grain storage structures, the Board has added verbiage that the written authorization shall certify that the precautions contained “in this section” and in section 5158 have been implemented prior to employees entering confined spaces.

- Section 5178(b)(1)(B) prescribes precautions for testing for oxygen content, combustible gases or vapors, combustible particulate, and toxic agents. A note has been added to clarify that this subsection does not preclude the requirement to control harmful exposures, under the provisions of Article 107, Dusts, Fumes, Mists, Vapors and Gases, to toxic substances at concentrations less than those immediately dangerous to life or health.
- Section 5178(b)(2) prescribes provisions for control of hazardous energy.

Comment No. 4:

The proposal does not contain the additional requirements for boatswains’ chairs as found in 1910.28(j).

Response:

This comment apparently refers to Section 5178(b)(6) [renumbered to (b)(5)], since it is the only place where it has been added to the standard. Boatswain’s chairs as specified elsewhere in Title 8 (e.g. Sections 1662 and 3286) and as used elsewhere [e.g. Section 3482(c)(1)], have not been previously challenged by Federal OSHA, and their specifications are not a part of this rulemaking, therefore, no modifications are proposed.

Comment No. 5:

The proposal does not contain information on what a “Class III body harness” is.

Response:

This comment apparently refers to Section 5178(b)(6) [renumbered to (b)(5)], since that is the only place where it is being added as part of this rulemaking proposal. Although the term “Class III body harness” is already used elsewhere in Title 8, and is commonly understood in the industry to be an ANSI/NFPA compliant full body harness, this proposal will be modified to

“full body harness” for clarity and which is more effective than the counterpart federal standard 1910.272(g)(2) which requires a “body harness.”

Comment No. 6:

The ANSI/NFPA codes referenced in Section 4848 do not cover the requirements of 1910.272(f)(2) as found in 1910.252(a)(3) and (4).

Response:

This comment is apparently in regard to proposed modifications to section 5178(c)(2). The Federal OSHA comment refers to 1910.252(a)(3) Welding or cutting containers, and (a)(4) Welding in confined spaces. These specialized subjects are not covered in Section 4848, however, they are covered in the following Title 8 sections:

1910.252(a)(3)(i) Welding or cutting used containers, is covered by Title 8, Section 5166(b)(1).

1910.252(a)(3)(ii) Venting and purging is covered by Title 8, Section 5166(b)(2).

1910.252(a)(4)(i) Accidental contact, is covered by Title 8, Section 4851(c)

1910.252(a)(4)(ii) Torch welding is covered by Title 8, Section 4845(x) and (y).

The Board accepts the comment and proposes to amend the proposal to reference GISO Groups 10 and 11 which comprehensively cover hot work processes including welding and cutting using gas and electric equipment.

Comment No. 7:

1910.272(l)(2)(A)-(C) specifies location requirements for filter collectors installed after March 30, 1988. California was obligated to adopt this standard as part of its agreement with Federal OSHA when it resumed administration of its State Plan on July 5, 1990. Therefore, Section 5178(f)(2)(A)-(C) must require filter collectors installed between July 5, 1990, and the effective date of the proposed standard to retroactively meet the requirements of 1910.272(l)(2)(A)-(C). Federal OSHA will allow a period not to exceed 1 year for phase-in.

Response:

The Board accepts this comment and proposes to modify Section 5178(f)(2) accordingly and add an exception for retroactivity.

Comment No. 8:

The referenced GISO 3314 does not include the requirement that locks and tags shall only be removed by the employee installing them, or, if unavailable, by his/her supervisor.

Response:

Although this provision is implicit in GISO 3314, the Board accepts this comment and proposes to clarify Section 5178(g)(3) by including verbiage verbatim of the federal standard.

Comment No. 9:

1910.272(o)(2) requires at least two means of emergency escape in all grain elevator tunnels constructed after March 30, 1988. California was obligated to adopt this standard as part of its agreement with Federal OSHA when it resumed administration of its State Plan on July 5, 1990.

Therefore, Section 5178(m)(3) must require two means of emergency escape in all grain elevators constructed after July 5, 1990 to retroactively meet the requirements of 1910.272(o)(2). Federal OSHA will allow a period not to exceed 1 year for phase-in.

Response:

The Board accepts this comment and proposes to modify Section 5178(m)(3) accordingly and add an exception for retroactivity.

The Board thanks Federal OSHA, Region IX, for their comments and participation in the rulemaking process.

David W. Smith, CSP, PE, Safety Engineer, Ensign Safety and Health Advisory, by letter dated April 19, 2006.

Comment No. 1:

Mr. Smith noted that the Notice of Public hearing contained a statement that "...the advisory committee determined that grains are not free flowing (loose) materials and do not present an engulfment hazard..." He stated that he disagrees with this statement. Each grain/seed had differing properties and potential hazards according to the properties. He noted that safflower seed, for example, is nearly as fluid as most liquids and has a very shallow natural angle of repose.

Response:

Board shares Mr. Smith's concern about the statement regarding the engulfment hazard of grains and wishes to clarify that the advisory committee minutes do not support the statement that "...grains are not free flowing (loose) materials and do not present an engulfment hazard..." The advisory committee minutes note that while the petitioner made this assertion, the committee neither accepted nor rejected that premise. The committee did, however, agree to separate engulfment protections for grains (GISO 5178) from those for other loose materials which are covered by GISO 3482. The Board accepts Mr. Smith's assessment; however, believes no changes to the proposal are necessary.

Comment No. 2:

The commenter asked for clarification whether 5178 will only apply to materials defined as "grain" and whether seed and other bulk materials stored outdoors would remain regulated by Section 3482.

Response:

Section 5178 will only apply to grains. Subsection 5178(a)(1) indicates that this section applies to all grain handling facilities, including grain elevators, outdoor flat storage and flat storage structures, feed mills, flour mills, rice mills, dust pelletizing plants, dry corn mills, soybean flaking operations, and the dry grinding operations of soycake.

Subsection (a)(2) notes that for the purposes of this section, the term "grain" includes raw and processed grain, grain products, and cottonseed. Cottonseed is included in (a)(2) because it is

used as a feed grain for cattle. The advisory committee minutes noted that cottonseed in the context of Section 5178 has not been de-linted, treated with fungicides and otherwise prepared for planting. Thus it is a grain and not a seed. The Board also notes that Section 3482(c)(1) retains seed within the scope of that section, thus no changes are necessary.

Comment No. 3:

Mr. Smith believes that the proposal has created an oversight and that it has no engulfment hazard protection for entry into or work on loose stored grain in flat storage structures or on loose stored bulk grain outdoors. He recommended a separate section entitled “Entry into flat storage structure or walking on loose stored bulk grain outdoors” be added to the proposal and that it repeat the proposed subsections 5178(b)(3) to (b)(7).

Response:

This comment is similar to Federal OSHA’s comment no. 2 above. The Board agrees that there is some unintended ambiguity in the proposal, and therefore accepts the comment to the extent that it proposes modifications to Subsection (b) to clarify engulfment hazard protection for entry into or work on loose stored grain in flat storage structures or on loose stored bulk grain outdoors.

Comment No. 4:

The commenter asked for confirmation that the proposal, Section 5178(a)(4) deletes “on farm or feedlot facilities.”

Response:

“...on farm or feedlot facilities...” is proposed to be deleted from Section 5178(a)(4). Thus, in context, Section 5178 will apply to grain handling at on-farm and feedlot facilities.

Comment No. 5:

The commenter asked for confirmation that the definition of “grain” is limited to the kernel and does not include the stalk or other vegetative matter of the grain plant, such as for silage. Would work on silage piles still be regulated by Section 3482?

Response:

The Board confirms that the definition of “grain” is limited to the kernel and does not include the stalk or other vegetative matter of the grain plant. Subsection 5178(a)(2)(A) has been added for clarity.

Comment No. 6:

The commenter notes that Section 5178(e) is titled “Grate openings;” however, the text goes on to apply to receiving pits. He recommends that the title be changed to “pit grate openings.” He expressed concern that, unless more specific, this section could be interpreted to include grain conveyor grating openings at other than receiving pits which in his opinion present a substantial hazard.

Response:

This new section is verbatim of Federal standard 1910.272(k). The Board is of the opinion that the subsection is clear that it applies only to receiving-pit feed openings and that no further clarification is necessary.

Comment No. 7:

The commenter observes that Section 5178(l)(1) addresses the duty of the host employer to inform the contractor of fire and explosion hazards; however it fails to require the host employer to inform the contractor of the hazards of engulfment. He recommends such a provision be added.

Response:

The Board agrees with the commenter and proposes to modify Section 5178(l)(1) accordingly.

Comment No. 8:

The commenter notes that Section 5178(n)(3) requires training for employees who (1) enter grain storage structures (e.g. bins, silos, etc.) or (2) work on grain storage piles (outdoors?). He is of the opinion that adding the term “flat storage structures” would ensure such training is provided for entry into warehouses and storage sheds/barns where there may be a question whether it is outdoors or not.

Response:

The Board believes the present verbiage is broad enough to cover storage piles in any location, whether in an enclosed storage structure, or in a “pole barn,” or piled outdoors, and that no further modification or clarification is necessary.

The Board thanks Mr. Smith for his comments and participation in the rulemaking process.

II. Oral Comments

No oral comments were received at the April 20, 2006, Public Hearing in Sacramento, California.

MODIFICATIONS AND RESPONSE TO COMMENTS RESULTING FROM
THE 15-DAY NOTICE OF PROPOSED MODIFICATIONS

No further modifications to the information contained in the Initial Statement of Reasons are proposed as a result of the 15-day Notice of Proposed Modifications mailed on September 11, 2006.

Summary and Response to Written Comments:

R.L. Matteis, Executive Vice President, California Grain and Feed Association
and

Ann Quinn, Manager, California Warehouse Association, by letter dated October 2, 2006

Comment:

California Grain and Feed Association (CGFA) and California Warehouse Association (CWA) support the revised language and believe that the proposed standard will improve safety at grain facilities.

Response:

The Board thanks CGFA and CWA for their support, comments and participation in the Board's rulemaking process.

ADDITIONAL DOCUMENTS RELIED UPON

None.

ADDITIONAL DOCUMENTS INCORPORATED BY REFERENCE

None.

DETERMINATION OF MANDATE

This standard does not impose a mandate on local agencies or school districts as indicated in the Initial Statement of Reasons.

ALTERNATIVES CONSIDERED

The Board invited interested persons to present statements or arguments with respect to alternatives to the proposed standard. No alternative considered by the Board would be more effective in carrying out the purpose for which the action is proposed or would be as effective and less burdensome to affected private persons than the adopted action.